In The Claims

Applicant submits below a complete listing of the current claims, with insertions indicated by underlining and deletions indicated by strikeouts and/or double bracketing.

Listing of the Claims

1. (Currently amended) A terminal for generating an electromagnetic field adapted to communicating with at least one transponder entering this field, including:

an oscillating circuit adapted to being excited by a high-frequency remote supply signal of the transponder;

an amplitude demodulator for detecting possible data transmitted by the transponder by modulating, at the rate of a sub-carrier, a load that the transponder forms on the terminal's oscillating circuit;

and including:

means for regulating a signal phase in the terminal's oscillating circuit in response to a reference value, the means having a long response time as compared to the rate of said sub-carrier;

means for measuring variables linked to a current in the oscillating circuit and to a voltage thereacross; and

means for comparing present values of these variables to predetermined values.

2. (Original) The terminal of claim 1, further including:

means for deactivating said phase regulation means; and

means for forcing a value of a settable element of the oscillating circuit.

3. (Original) The terminal of claim 2, wherein said settable element is formed of a variable capacitive element of the oscillating circuit of the terminal.

4. (Original) The terminal of claim 2, wherein the settable element is common to the phase regulation means and to the forcing means.

5. (Previously presented) A method for controlling a terminal for generating an

electromagnetic field adapted to communicating with at least one transponder entering this field, the terminal including: an oscillating circuit adapted to being excited by a high-frequency remote supply signal of the transponder; an amplitude demodulator for detecting possible data transmitted by the transponder by demodulating, at the rate of a sub-carrier, a load that it forms on the terminal's oscillating circuit; means for regulating a signal phase in the terminal's oscillating circuit in response to a reference value having a long response time as compared to said sub-carrier; means for measuring variables linked to a current in the oscillating circuit and to a voltage thereacross; and means for comparing present values of these variables to predetermined values the method comprising:

exploiting the results of the comparison means to detect a presence of a transponder in the terminal's field.

6. (Original) The method of claim 5, including, in the absence of a useful signal of sufficient amplitude to enable detection of data by the demodulator and if a transponder has been detected by the comparison of the current and predetermined values:

deactivating the phase regulation means; and

forcing the value of the settable element of the oscillating circuit to a value such that said variables recover said predetermined values.

7. (Original) The method of claim 5, wherein said predetermined values correspond to values measured and stored during an off-load operation of the terminal, while no transponder is present in its field.

8. (Original) The method of claim 7, including forcing the value of the settable element to a value determined by the phase regulation means during the off-load operation.

9. (Previously presented) A system for generating an electromagnetic field adapted to communicate with at least one transponder entering the electromagnetic field, comprising:

an oscillating circuit adapted to being excited by a high-frequency remote supply signal of the transponder;

an amplitude demodulator to detect possible data transmitted by the at least one

transponder by demodulating a load formed on the oscillating circuit by the at least one transponder; and

detection circuitry to detect that the at least one transponder is present in the electromagnetic field even if the amplitude demodulator has not detected any data transmitted by the at least one transponder.

10. (Previously presented) The system of claim 9, wherein the detection circuitry comprises:

means for detecting that the transponder has entered the electromagnetic field even if the amplitude demodulator has not detected any data transmitted by the transponder during the entry.

11. (Previously presented) The system of claim 9, wherein the detection circuitry enables the terminal to be insensitive to demodulation gaps of data transmitted by the at least one transponder when present within the electromagnetic field.

12. (Previously presented) The system of claim 9, further comprising:

a correction circuit to change a value of an element of the oscillator in response to detecting that the at least one transponder is present in the electromagnetic field when the amplitude demodulator has not detected any data transmitted by the at least one transponder.

13. (Previously presented) The system of claim 12, wherein the oscillating circuit comprises a variable capacitive element, and wherein the correction circuit is operative to change a value of the variable capacitive element in response to detecting that the at least one transponder is present in the electromagnetic field when the amplitude demodulator has not detected any data transmitted by the at least one transponder.

14. (Previously presented) The system of claim 9, wherein the detection circuitry comprises a current transformer to measure the current in the oscillating circuit.

15. (Previously presented) The system of claim 9, wherein the detection circuitry is operative to detect the voltage across the oscillating circuit.

16. (Previously presented) The system of claim 9, further comprising:

an oscillator to generate a reference signal of the terminal from which the electromagnetic field is generated; and

phase regulation circuitry to detect a phase interval between the reference signal and a current through the oscillating circuit, and to generate a control signal to modify a value of an element of the oscillating circuit based on the detected phase interval.

17. (Previously presented) The system of claim 16, wherein the oscillating circuit comprises a variable capacitive element, and wherein the phase regulation circuitry is operative to generate the control signal to modify a value of the variable capacitive element based on the detected phase interval.

18. (Previously presented) A method of detecting a presence of at least one transponder within an electromagnetic field generated by a terminal that comprises an oscillating circuit, the method comprising:

determining that the at least one transponder is not present in the electromagnetic field by performing amplitude demodulation on the oscillating circuit; and

ascertaining whether the determination is correct based on a voltage measured across the oscillating circuit and a current measured in the oscillating circuit.

19. (Currently amended) The method claim 18, wherein the step of determining comprises determining ~~by performing amplitude modification on the oscillating circuit~~ that data has not been transmitted in the electromagnetic field by the at least one transponder.

20. (Previously presented) The method of claim 18, wherein the step of ascertaining comprises determining that the at least one transponder is present in the electromagnetic field.

21. (Currently amended) The method of claim 18, wherein the step of ascertaining comprises:

measuring the voltage across the oscillating circuit;

measuring the current in the oscillating circuit; and

comparing a ratio of the measured voltage ~~to~~ and the measured current to a predetermined ratio.

22. (Previously presented) The method of claim 21, wherein the predetermined ratio corresponds to a voltage measured across the oscillating circuit and a current measured in the oscillating circuit when no transponder was present in the electromagnetic field.

23. (Previously presented) The method of claim 18, further comprising:

changing a value of an element of the oscillating circuit if the ratios are different.

24. (Previously presented) The method of claim 23, wherein the oscillating circuit comprises a variable capacitive element, and wherein the step of changing a value comprises changing a value of the variable capacitive element.

25. (Previously presented) The method of claim 18, further comprising:

generating a reference signal of the terminal from which the electromagnetic field is generated;

detecting a phase interval between the reference signal and a current through the oscillating circuit; and

modifying a value of an element of the oscillating circuit based on the detected phase interval.

26. (Previously presented) The method of claim 25, wherein the oscillating circuit comprises a variable capacitive element, and wherein the step of modifying includes modifying a value of the variable capacitive element.

27. (New) The terminal of claim 1, wherein the means for regulating is operative to maintain a constant phase relationship between a signal in the oscillating circuit and a reference signal.

28. (New) The system of claim 9, further comprising:

a phase regulating circuit to regulate a phase of a signal in the oscillating circuit.

29. (New) The system of claim 28, wherein the phase regulating circuit is operative to maintain a constant phase relationship between the signal in the oscillating circuit and a reference signal.

30. (New) The system of claim 28, further comprising:

a circuit to deactivate the phase regulation of the oscillating circuit in response to the amplitude demodulator not detecting any data transmitted by the at least one transponder and the detection circuitry detecting that the at least one transponder is present in the electromagnetic field.

31. (New) The method of claim 18, further comprising regulating a phase of a signal in the oscillating circuit.

32. (New) The method of claim 31, wherein the regulating comprises maintaining a constant phase relationship between the signal in the oscillating circuit and a reference signal.

33. (New) The method of claim 31, wherein the ascertaining ascertains that the determination is incorrect,

wherein the method further comprising deactivating the regulation of the phase in response to the ascertaining.